**Precalculus Review for Chapter 2**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sketch each graph without a calculator**.

1. f(x) = (x - 3)3(x + 1)2  2. f(x) = (x - 1) 2 + 6

3. y = -4( x + 6)(x - 3)(x - 2)(x + 4) 4. f(x) = (x - 2) (x + 3)

**Graph a function with the given zeros and the multiplicity.**

5. Zeros are: 3 (multiplicity of 2) and -4 (multiplicity 4)

**Find the x and y-intercepts, the Vertical and Horizontal asymptotes and sketch the graph.**

6. f(x) =  7. g(x) = 

8. f(x) = (x + 1)(x - 5) 2 9. h(x) =

10. Write an equation for the linear function f satisfying the given conditions: f(-1) = 3 and f(2) = 6

11. Write an equation for the quadratic function whose graph contains the given vertex and point: Vertex (3, 6), point (4, 14)

**12. Find the remainder when f(x) is divided by x - k. (Use Remainder Theorem)**

f(x) = x3 - 3x2 + 6; k = 2

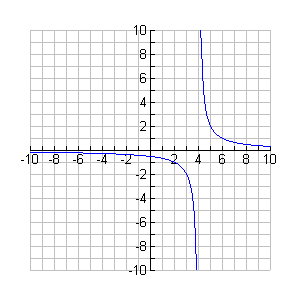
**13. Write a polynomial function of minimum degree with real coefficients whose zeros include those listed. Write polynomial in standard form.**

2, -5, 1 + i

**For the given functions, find all the intercepts, domain, and asymptotes:**

14. g(x) =  15. 

**16. Evaluate the limit based on the graph: **



**Solve each equation algebraically:**

17. 18. 

**19. State how many complex and real zeros the function has:**

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**Using the given zero, find all other zeros** **of the given functions.**

20. f(x) = x4 + 4x2 – 45; x = 3i

21. g(x) = x3 - 5x2 + 12x - 18 ; x = 3

**Determine the x values that cause the polynomial function to be a) zero, b) positive, and c) negative:**

22. f(x) = (x – 7)(x + 2)(x + 1)

**Solve the polynomial inequality**:

23. (x – 2)(x + 4)(x – 1) < 0

24. A garden plot is 12 ft. longer than it is wide. The perimeter of the garden plot is 64 feet. Find the dimensions of the garden plot.